What is claimed is:

1   1.   A system for managing licenses for protected software on a
2   communication network, the system comprising:
3   at least one client computer coupled to the communication network for
4   requesting authorizations to use the protected software; and
5   a pool of license servers coupled to the communication network, each
6   license server programmed for managing a distribution of one or more allocations to use the
7   protected software, the pool of license servers including a current leader server programmed
8   for maintaining a record of allocations for license servers in the pool.

1   2.   A system as recited in claim 1, the pool of license servers further
2   including at least one follower server, each follower server programmed for managing the
3   distribution of allocations for that particular follower server.

1   3.   A system as recited in claim 2, each license server further including
2   memory for storing a status of the allocations for that particular license server;
3   wherein each follower server is programmed for communicating the status of the
4   allocations for that particular follower server to the current leader server.

1   4.   A system as recited in claim 3, wherein each follower server is
2   programmed such that it is capable of becoming a new leader server if the current leader server
3   can no longer manage the distribution of allocations for the license servers.

1   5.   A system as recited in claim 1, wherein the pool of license servers are
2   programmed for communicating with each other and determining when a particular license
3   server can no longer manage a distribution of allocations to use the protected software.

1   6.   A system as recited in claim 1, wherein the license servers are

2 programmed for preventing the issuance of an authorization to use protected software unless a

3 majority of license servers are functioning and capable of managing a distribution of

4 allocations to use the protected software.

1   7.   A system as recited in claim 5, wherein each client computer that has

2 received an authorization from a particular license server, and the particular license server that

3 sent the authorization to the client computer, are programmed for communicating heartbeats

4 between each other; and

5   wherein each client computer that has received an authorization from a

6 particular license server is programmed for determining whether that particular license server

7 is still capable of managing a distribution of allocations to use the protected software.

1   8.   A system as recited in claim 7, wherein each client computer that has

2 received an authorization from a particular license server but has determined that particular

3 license server is no longer capable of managing a distribution of allocations to use the

4 protected software is programmed for:

5   locating a new leader server; and

6   communicating a heartbeat from the client computer to the new leader server.

1   9.   A system as recited in claim 8, wherein if the new leader server receives

2 a heartbeat from a client computer that has located the new leader server, the new leader server

3 is programmed for:

4   determining if the new leader server had already issued an authorization to the

5 client computer; and

6   converting the heartbeat to a request for an authorization if the new leader

7 server had not already issued an authorization to the client computer.

1   10.   A system as recited in claim 5, each license server further including

2   memory for storing a license file and sequence number;

3   wherein if a particular license server is no longer capable of managing a

4   distribution of allocations to use the protected software, the memory in the particular license

5   server is capable of receiving a new redundant license file and a new sequence number; and

6   wherein if the particular license server is brought back on line and if the new

7   sequence number is greater than any sequence number currently stored in the memory of the

8   other license servers in the pool, the particular license server and the other license servers in

9   the pool are programmed for transferring the new redundant license file to other license servers

10   in the pool.

1   11.   A method for managing licenses for protected software on a

2   communication network, the method comprising:

3   coupling at least one client computer to the communication network for

4   enabling the at least one client computer to issue a request for an authorization to use the

5   protected software over the communication network;

6   coupling a pool of license servers to the communication network for

7   managing a distribution of allocations to use the protected software; and

8   selecting one of the license servers in the pool as a current leader server

9   and maintaining a record of allocations for license servers in the pool with the current leader

10   server.

1   12.   A method as recited in claim 11, further including the steps of:

2   designating other license servers that are not the current leader server as

3   follower servers; and

4   managing the distribution of allocations for each follower server with that

5   particular follower server.

1   13.   A method as recited in claim 12, further including the steps of:

2   storing a status of the allocations for each license server within each license

3   server; and

4   communicating the status of the allocations for each follower server to the

5   current leader server.

1   14.   A method as recited in claim 12, further including the step of

2   determining, by communications between the pool of license servers, when a particular license

3   server can no longer manage a distribution of allocations to use the protected software.

1   15.   A method as recited in claim 11, further including the step of preventing

2   license servers from issuing authorizations to use protected software unless a majority of

3   license servers in the pool are functioning and capable of managing a distribution of allocations

4   to use the protected software.

1   16.   A method as recited in claim 14, further including the steps of:

2   communicating heartbeats between client computers that have received an

3   authorization from a particular license server and that particular license server; and

4   determining, for each client computer that has received an authorization from a

5   particular license server, if that particular license server is still capable of managing a

6   distribution of allocations to use the protected software.

1   17.   A method as recited in claim 16, wherein for each client computer that

2   has received an authorization from a particular license server but has determined that particular

3   license server is no longer capable of managing a distribution of allocations to use the

4   protected software, the method further includes the steps of:

5   locating the new leader server; and

6   communicating a heartbeat from the client computer to the new leader server.

1   18.   A method as recited in claim 17, wherein if the new leader server

2   receives a heartbeat from a client computer that has located the new leader server, the method

3   further includes the steps of:

4   determining if the new leader server had already issued an authorization to the

5   client computer; and

6   converting the heartbeat to a request for an authorization if the new leader

7   server had not already issued an authorization to the client computer.

1   19.   A method as recited in claim 14, further including the steps of:

2   storing a redundant license file and sequence number within each license server;

3   storing a new redundant license file and a new sequence number in a particular

4   license server that is no longer capable of managing a distribution of allocations to use the

5   protected software;

6   restoring functionality to the particular license server that was no longer capable

7   of managing a distribution of allocations to use the protected software; and

8   transferring the new redundant license file to other license servers in the pool if

9   the new sequence number is greater than any sequence number currently stored in any other

10   license server in the pool.